

# THE AMERICAN FARMER

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## Silos AND ENSILAGE.

### The Method of Building Silos, and the Best Way of Filling Them.

**EDITOR AMERICAN FARMER:** Please answer these queries either by private letter or through the columns of your valuable paper.

1. What grasses are best suited to making silage; or, are grasses and grains mixed better?

2. Does whatever is used have to be cut fine before being put into silos?

3. Will silos work all right in as cold climate as North Dakota? What will prevent the composition becoming a frozen mass?

4. Why doesn't the ensilage, after it becomes heated, continue to heat and decompose like a manure heap?

5. Will you sometime please give plans for constructing silos?

6. When should they be filled? Any information you may give will be gratefully received.

7. I am located on a small stream in which there is ample water for irrigation—yes, for thousands of acres, but the great trouble is to get the water where we want it. The losses range from \$10 to \$15. One having money enough should of course dam the stream and ditch the water to where desired, but surely there is some cheaper way. There are places along this stream sufficiently swift to furnish considerable power. How does the bucket irrigating wheel work? What does it cost? Are they run by windmill or must the stream have sufficient power?

Please excuse ignorance and help enlighten and oblige a subscriber.—B. L. HORDAWAY, Williston, N. D.

1. In the United States corn is most generally used for silage. But many varieties of sorghum are also used, and pearl millet, alfalfa, soja bean, clover, cowpeas, rye, etc., etc. In Minnesota Southern Ensilage corn is found to produce twice as much fodder as the Minnesota Dent, Leaming's Sibley's Pride of the North, etc., but the medium-sized Dent corn had a higher nutritive value,

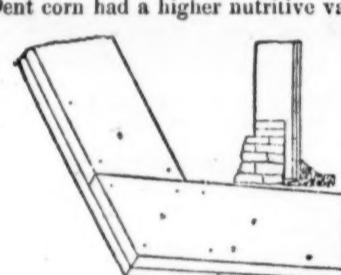


FIG. 1.

and much labor was saved in handling it. The Dent varieties yielded more fodder and dry matter than either the flint or sweet varieties. In Wisconsin the Southern Horse Tooth gave most green fodder, protein, and sugar. In Vermont Wisconsin Yellow and Pride of the North gave best results. The yield of sorghum is generally greater than that of corn, and it remains green longer in the field, thus protracting the time of filling the silo. The Wisconsin Station got very good results from clover silage, and found it richer in protein than corn. The question of mixing depends, we believe, on the maturity of the different kinds of forage siloed. Those that are in the same condition of maturity can be safely mixed in the silo.

2. Though some do not eat the silage, the general opinion is that it is much better to do so. The finer it is cut the closer will it pack and the better will it preserve. Many prefer it as small as half-inch lengths. The labor of cutting and filling is the hard work of ensilage. The corn can be cut by hand or power. A hand cutter can be bought for from 25 to 40 cents, or one can be made out of an old hoe or a piece of a broken scythe.

3. Silos do very well in Minnesota, Wisconsin, and Vermont, and should think they would do equally well in North Dakota.

4. This matter is not yet thoroughly understood, and to explain what is known of it requires a long explanation of the principles of fermentation. As a partial and makeshift explanation, we will instance the fermentation of starch, which by different stages of fermentation changes first to sugar, then to alcohol, next to acetic acid, and then to butyric acid. The silage goes through one stage of fermentation, in which yeasts and bacteria play complex parts. After heating, the silage settles, the air is excluded, and further fermentation is largely prevented.

5. There is an infinite number of ways of building silos. The first, built in France and England, were of brick and stone, and this practice was at first followed in this country. Now, almost everywhere wood is preferred. The best form is circular, as it gives more contents to the same amount of wall; and still more important, it has no corners, where the ensilage is imperfectly packed and rendered liable to spoil. The location should be as near the barn or feeding place as possible, as ensilage is heavy stuff to handle. The size depends upon the number of animals to be

fed and the number of days that they are to depend on silage. For a cow 30 to 45 pounds, or 1½ bushels a day, is usually estimated, with one-half this for a horse

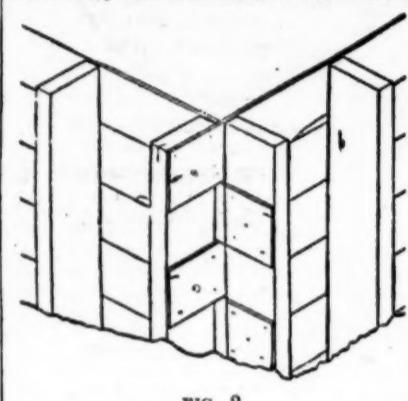


FIG. 2.

to build. Make it a square pitch and use 2 x 5 by 13 feet rafters, which will give projection enough to the roof. Tie these with 1 x 5 by 13 feet pieces, as shown in Fig. 3. It will require 15 pairs of rafters and collars, or ties, of which on one side the middle ones will be cut out to give place to the upper doors to be used in filling the silo. Cover with cheap lumber and shingle.

#### THE GABLES

may be boarded up with the same cheap material as that put on the roof, or, if the outside is covered with good material, it should be carried on up the gables. One six-light sash should be put in each gable for light in the silo, but it is not essential, and is not included in the bill of material.

#### FINISHING THE INSIDE

The silo is now 20 feet deep, including the sills and walls. The vertical matched and surface boarding should be long enough to reach from the bottom of the

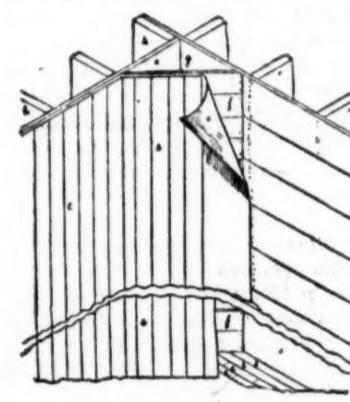


FIG. 4.

wall to the top of the studs, and as carefully matched as a floor. This inside lining must be of good material. Before nailing in there should be some air tight material, a tared building paper, hung in strips from the top to the bottom, to lap two or three inches, and the boards then put on. At this point attention should be given to the corners. It will probably be economy to cut pieces across the corners two or three feet long, chamfer the edges so they will fit well, hang the paper and lay on the vertical siding. Something of an idea of the work on the inside may be gathered from Fig. 4, which shows: a, a bit of the foundation; b, sills; c, rough boarding; d, tared building paper; e, vertical matched boarding; f, corner pieces, cutting off the corner; g and h, the tops of the

#### THE DOORWAYS

After the rough boards of the partition are put on the doorways will be 35 inches wide in the clear, if the partition boards are lapped out past the middle studs and cut off at the center of the studs on the opposite side. Nail in securely a one-inch piece as wide as the studs and as long as the door is high on each side. These will protect the studs and support the pieces put across the doorway to retain the silage. In putting up the vertical boards leave one inch from the ends of the horizontal boards to break joints, and finish at two inches from the stud on the partition. These doorways should be of uniform height six feet, and four in number, two in each division. They will be 33 inches wide when completed. The pieces to fill up this space should be cut just three feet long for the first set, to match the horizontal boarding, and three feet one inch to fill between the vertical boards and partition, and when put up should be separated by tar paper. When the out-

#### STUDDING AND BOARDING UP INSIDE.

Stand the center of the 2 x 10 by 20

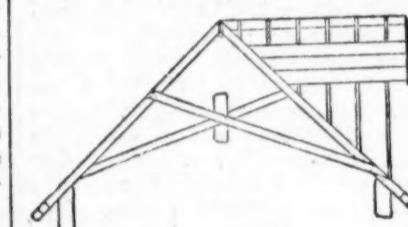


FIG. 3.

feet, studding on the sills 14 inches from the corner at each of the four corners; stay these, and at one corner begin boarding up the inside with boards one inch thick and of uniform width, so they can readily be alternated at the corners, as shown by Fig. 2. As the boarding proceeds so the other studs can be readily held in place; set the end studs 18 inches apart from center to center, and the side stud 17 inches apart, measuring from the center of the end stud toward the middle of the silo. Each end will contain 10 studs, and the partition the same; but the end ones in the partition must be set back from the wall two or three inches. The back side will contain 15, and the middle one will be set so one of its sides will line with one edge of the partition studding. The seventh stud from each side in front will be moved toward the middle to line with the partition boarding, so they will stand but two inches apart, to leave a good doorway into each room. On the ends, boards (or plank) 15 feet long should be used, so there will be no splicing. This would also be a good length for the sides. The middle studs in front and the one in the back wall standing in the partition line allows tying the silo across very firmly by the first or horizontal boarding. The partition boards alternating with the back side (see Fig. 2), while in front the whole length of the doors should be put above the partition over these doors, or on the opposite side, and a dormer roof raised over it, as shown in Fig. 3.

#### THE ROOF.

Having now provided for the rough inside boarding, the roof is the next part

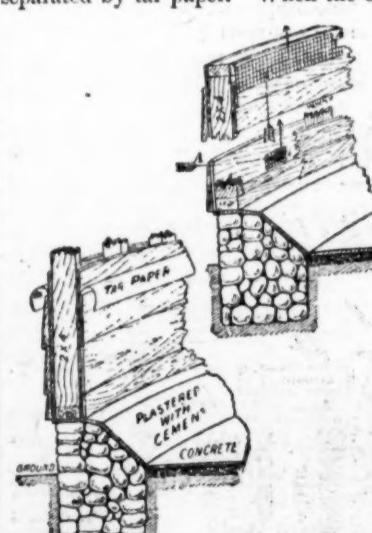


FIG. 5.

side is finished, swing doors may be put on the outside, if necessary, to protect from frost, or, if desired, for finish. In boarding outside use 2 x 4 or 3 x 3 studs on the corners to nail to. For convenience in filling the silo a door should be put above the partition over these doors, or on the opposite side, and a dormer roof raised over it, as shown in Fig. 3.

#### BOTTOM OF THE SILO.

If the silo is on dry ground, it will not

be necessary to more than pack in four or five inches of small stones and cover with puddled clay. If in a wet place, one or two drains should be made from it, and gravel and cement be put on the stones and the walls plastered up with cement.

#### COATING THE INSIDE.

Various mixtures, as well as clear coal tar or linseed oil, are recommended and used with varying success. The silo at the New York State Experiment Station at Geneva, N. Y., was built in the Fall of 1888, too late to be used that season. The inside boarding was of soft pine. A short time before using, in 1889, this silo was coated with paraffine and resin, to which was added enough of boiled linseed oil to prevent cooling too quickly on the brushes in the application. This made a glossy finish, resembling varnish, with considerable body to it. It hardened in a very short time after being put on, and seems to remain impervious to the action of the silage after two years' use.

After removal of the first silage put in, some of which was in the silo nine months, this coating appeared as glossy as when first put on, except in places where silage had stuck; but on rubbing these places it was found to leave the surface bright. The bottom of this silo is a little below the level of the basement floor, and that part, as well as two of the walls to the level of the barn sills, are against stone walls and are plastered with cement, to which the mason gave an extra hard, smooth finish. After nearly emptying this silo, the second time, the Director of the Station, Dr. Peter Collier, writes: "So far as the cement walls are exposed they show no noticeable disintegration or decay. The wooden walls are only slightly discolored in patches where the silage adhered. The wood does not seem to have suffered any decay. Some of the boards were examined with a knife, and none of them showed signs of decay." The mixture of ingredients for this coat was 7½ pounds of paraffine to 10 pounds resin, to which was added about one quart of oil. This amount, spread with a brush, should cover 400 to 450 square feet. A gentleman living in the neighborhood built a silo and coated it with coal tar; he writes about it as

from fencing ripped in two; outside sheeting the same; siding for silos under 28 feet, outside diameter, common siding rabbed; for silos more than 28 feet outside diameter common drop siding or ship lap may be used. A, shows ventilator between studding; auger holes are bored at bottom between studding, and the boards lack two inches of reaching plate at top inside. Both sets of openings are covered with wire cloth to keep out vermin. There should be a line of feeding doors from top to bottom, each two or three feet by five feet, and about 2.5 feet apart.

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from the stud between studding.

Fig. 6 shows two methods of roofing round silos and the manner of connecting them with a barn. A, A, shows where air is admitted between the studding to ventilate behind the lining; B, B, the feeding chute; C, C, filling window. The cupola is essential for perfect ventilation.

Fig. 7 shows method of laying and leveling foundation of a round silo, and a round silo with a single partition. A, center post with top level with top of proposed wall; B, B, straight edge board nailed to stakes driven in ground; C, straight edge fixed to turn on a pin at A; A, B, B, are all nailed level with top of post A; D, partition in round silo. It may be placed so as to come in the middle of the single line of doors, letting the same doors answer for both sides.

Fig. 8 shows the construction and ventilation of the walls of a rectangular silo. The sills are two inches narrower than the studding to leave air space between the sills and lining. A, is two inches of mortar made by stirring sand into coal tar, boiled until it is hard when cold. B, is bolt anchoring sill to wall, placed about four feet apart. C, ventilator between studding.

Fig. 9 shows the construction and ventilation of the walls of a rectangular silo. The sills are two inches narrower than the studding to leave air space between the sills and lining. A, is two inches of mortar made by stirring sand into coal tar, boiled until it is hard when cold. B, is bolt anchoring sill to wall, placed about four feet apart. C, ventilator between studding.

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Fig. 12 shows the construction and ventilation of the walls of a rectangular silo. The sills are two inches narrower than the studding to leave air space between the sills and lining. A, is two inches of mortar made by stirring sand into coal tar, boiled until it is hard when cold. B, is bolt anchoring sill to wall, placed about four feet apart. C, ventilator between studding.

Fig. 13 shows the construction and ventilation of the walls of a rectangular silo. The sills are two inches narrower than the studding to leave air space between the sills and lining. A, is two inches of mortar made by stirring sand into coal tar, boiled until it is hard when cold. B, is bolt anchoring sill to wall, placed about four feet apart. C, ventilator between studding.

Fig. 14 shows the construction and ventilation of the walls of a rectangular silo. The sills are two inches narrower than the studding to leave air space between the sills and lining. A, is two inches of mortar made by stirring sand into coal tar, boiled until it is hard when cold. B, is bolt anchoring sill to wall, placed about four feet apart. C, ventilator between studding.

Fig. 15 shows the construction and ventilation of the walls of a rectangular silo. The sills are two inches narrower than the studding to leave air space between the sills and lining. A, is two inches of mortar made by stirring sand into coal tar, boiled until it is hard when cold. B, is bolt anchoring sill to wall, placed about four feet apart. C, ventilator between studding.

Fig. 16 shows the construction and ventilation of the walls of a rectangular silo. The sills are two inches narrower than the studding to leave air space between the sills and lining. A, is two inches of mortar made by stirring sand into coal tar, boiled until it is hard when cold. B, is bolt anchoring sill to wall, placed about four feet apart. C, ventilator between studding.

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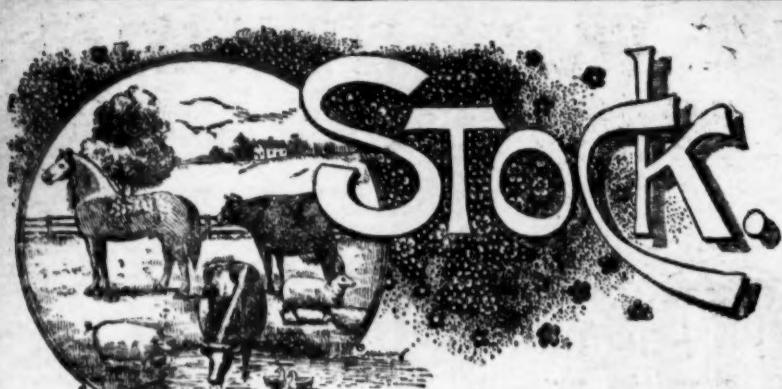
Fig. 21 shows the construction and ventilation of the walls of a rectangular silo. The sills are two inches narrower than the studding to leave air space between the sills and lining. A, is two inches of mortar made by stirring sand into coal tar, boiled until it is hard when cold. B, is bolt anchoring sill to wall, placed about four feet apart. C, ventilator between studding.

Fig. 22 shows the construction and ventilation of the walls of a rectangular silo. The sills are two inches narrower than the studding to leave air space between the sills and lining. A, is two inches of mortar made by stirring sand into coal tar, boiled until it is hard when cold. B, is bolt anchoring sill to wall, placed about four feet apart. C, ventilator between studding.

Fig. 23 shows the construction and ventilation of the walls of a rectangular silo. The sills are two inches narrower than the studding to leave air space between the sills and lining. A, is two inches of mortar made by stirring sand into coal tar, boiled until it is hard when cold. B, is bolt anchoring sill to wall, placed about four feet apart. C, ventilator between studding.

Fig. 24 shows the construction and ventilation of the walls of a rectangular silo. The sills are two inches narrower than the studding to leave air space between the sills and lining. A, is two inches of mortar made by stirring sand into coal tar, boiled until it is hard when cold. B, is bolt anchoring sill to wall, placed about four feet apart. C, ventilator between studding.

Fig.



## Yard Echoes.

If you must Winter oxen with nothing to do, be getting them in shape for beef after Spring work is done.

Where there is no artificial warmth, the animals have to furnish their own heat, and it must be done from the food which they consume.

When the calves are raised by hand they are less trouble, all things considered, if they are dropped in the Fall rather than in the Spring.

Make the barn as tight as boards and shingles and clapboards will make it, and see that it is made tight underneath so that the cold will not drive in there.

The colder the weather the more attention should be given to the stock. Keep them warm and in close quarters when the thermometer drops below zero.

The kind of food which may be sufficient to keep grown animals in good condition is not sufficient for young ones. An extra allowance must be made for increase of bone and muscle.

Frostbitten hay and poor marsh hay should not be fed to the cows in large quantities, as it will affect the quality of the butter. A little marsh or salt hay is good, and makes a fine relish for them.

It is not what is eaten, but what is digested, that benefits and fattens the animal. With a balanced ration and some bulky food it will eat more and retain its appetite than when fed only on fattening food.

The bull should be made to do much more toward earning his living than he does. How? is the problem. He is not always governable in a team. Making him work a tread mill to saw wood, churn milk, etc., has been suggested.

Animals must be kept growing from the time they are born until they are led to the slaughtering house. But there is a difference between growing and growing fat. All of the young animals should be growing rapidly, but growing size, bulk, strength, bone and sinew, and not fat.

To protect cattle from troublesome fleas, a sponge dipped in the kerosene emulsion may be rubbed over the skin. A little creosote added to the emulsion, so as to give it a smoky odor, will help to make it more effective. For the large lice, the same proportion of linseed oil as of kerosene added to the emulsion will be an improvement. This is the best application for the horn fly, as well as all other insect vermin.

## Care of Horses.

In an address before the Massachusetts Board of Agriculture, the Hon. John E. Russell said, in regard to the horse:

"Our knowledge of him begins at the very beginning of history, and comes along in the progress with man himself. Farmers need horses, but I can hardly recommend the breeding of them on our New England farms. Horses cannot be bred or raised without proper feeding. The horse, like the human being, requires an appetite to eat and a stomach to assimilate food. A great deal depends on the way the horse is treated. The majority of men are kind to horses, but occasionally a horseman is found no more fit to take care of or to associate with a horse than with a wild animal. There is no rule to go by in the stable for the care of horses or for the amount of food to be fed. Much depends on the size, disposition, and amount of work to be done. I believe that one of the most frequent causes of disability, feeblelessness and weakness in horses is caused by over feeding."

## Feeding Pumpkins.

Pumpkins are far more nutritious than is generally supposed. Some analyses made by Prof. Storer, of the Bussey Institute, go to show that the dry matter of these gourds is far more nutritious than the best kinds of grains. The following figures will show this very clearly:

Composition of the	Albuminoid,	Carbo-	Fat,	Per cent.
dry matter of	nitrogenous	hydrates,	per cent.	per cent.
Pork of pumpkin.....	12.63	61.65	1.93	
Flesh of squash.....	10.37	75.82	3.29	
Flint of squash.....	10.95	44.78	3.62	
Skin of squash.....	10.95	50.51	3.56	
Content of pumpkin.....	25.91	50.54	17.04	
Content of squash.....	23.89	58.98	18.74	

There is a common error that cows should not be allowed to eat pumpkin seeds, as these have a tendency to dry up the milk. Careful experiments have shown this not to be true, and therefore the fear of it should not be allowed to prevent the farmer availing himself of this important food supply.

## Bad Times in Texas.

Capt. Joseph F. Nash, an extensive ranchman, reports that in many localities in western Texas no rain has fallen for five months and consequently there is no grass, the range in many sections having been completely eaten up. Range cattle have been reduced to skeletons and even now are dying by hundreds. With the advent of the cold weather, which generally strikes Texas about the latter part of December or the early days of January, the loss of cattle is expected to be frightful. Sheepmen are badly off as cattlemen, as their range is as exhausted, and the low price for which wool is selling ( $\frac{1}{2}$  cents a pound) in the San Antonio market will not cover the cost of production.

## The Silo in Summer.

Farmers have heretofore regarded the silo as only a resource for Winter feeding, but the Vermont Experiment Station has demonstrated that corn ensilage is a much more reliable and satisfactory method of Summer soiling than any other, and that silage fed alongside the best fresh cut corn in the Fall gave the best results. This view is confirmed by the experience of several practical farmers in various parts of the country who gave the Summer silo a thorough trial. The Summer silo should be made deeper and narrower than the Winter one, so as to expose as little surface as possible to the fermentative air.

## Condemned Cattle.

Secretary Edge, of the Pennsylvania State Board of Agriculture, accompanied by the State Veterinary Surgeon, Dr. Bridge, examined the herd of cattle belonging to Hiram Warner, near Philadelphia, which had been reported as affected with tuberculosis, and upon applying the usual test it was found that 11 head were affected. It is probable that they will be killed.

## Stock Diseases in Illinois.

The eighth report of the Illinois State Board of Livestock Commissioners says that during the past year the principal cattle diseases dealt with were anthrax and actinomycosis, which were raging for some time in the Counties of Wayne, Clay, Edwards, White, and Hamilton, and caused so many deaths. Many people were infected while handling the disease, and one man nearly lost his life.

From June 15 to Oct. 15 100 horses and mules valued at \$50 each, 600 cattle valued at \$20 each, 250 hogs valued at \$8 each, and 20 sheep valued at \$2 each, died from the disease, entailing a loss upon owners of some \$20,000.

Anthrax has existed to a limited extent in Clay County for the past seven years, in Wayne County three years, and in Edwards County one year. The plan adopted by the board to fight the disease proved successful. They caused local boards of health to be organized in all Counties where the disease existed. Strict rules were adopted providing for the cremation of all animals dying from this disease, and the prompt disinfection of all infected premises.

Boards of Health should maintain their vigilance, as neglect to burn the dead animals may cause another outbreak. Of cattle affected with actinomycosis the board have during the year quarantined 1,272, of which 1,006 were slaughtered and condemned as unfit for food.

Of diseases of horses, glanders has appeared in 20 Counties. Sixty two horses and four mules were found diseased; 208 horses and 12 mules were quarantined for exposure; 71 horses and four mules were destroyed at an expense of \$2,754.

## Animal Fertilizers.

The quantity of manure produced per year by the various classes of animals was estimated by Boussingault as follows:

	Lbs.	Tons
Horse (90 lbs) liquids.....	12,000	2.50
Horse, solids.....	8,000	.74
Cows, liquids.....	20,000	4.00
Cows, solids.....	8,000	.80
	28,000	14

Value per ton of manure produced by various classes of animals.

Horses..... \$2.80

Cows..... .80

Sheep..... 4.00

Swine..... 2.25



## A CORRECTED MISTAKE.

**J**OHN RALEIGH came down the steps of his great brown-stone mansion one dull, gloomy evening and turned listlessly in the direction of the nearest park. He wanted to get away to himself, and be as much alone as he could be, in the heart of that great city; he, so well known in his own particular corner of the world.

Author, scholar, scientist, was John Raleigh; a man whose name was already set in diamonds among the savants. His researches, geological and otherwise, were among the most valuable and successful of the 19th century, and he was great and famous. Of course, he was old; for seldom, if ever, does even the brow of the scholar with her laurel wreath until age has dimmed the eyesight and silvered the hair.

Old, and alone in the world. Without wife or child, or ties of home; although he called that grand stone mansion by the dear loved name, it was as unsatisfactory to the lonely heart of the scholar as the French word "maison," which in that language is the only term for home.

All day long John Raleigh worked at his desk, and when night came he sometimes went to his club, or perhaps entertained a few bachelor friends. But one by one his circle of friends had dropped away, and he found that he had few left whose society was congenial. Of course, the great world of fashion was open for him to enter; hundreds of sumptuous dwellings whose inmates would have welcomed him gladly; but he shrank from contact with the world of society, and went on in his lonely life. Like many others who—

"And on their torn hearts from breaking,  
Their eyes from weeping, and their brows from  
And follow the long pathway all alone."

This evening as he sauntered along, a tall, thin form, somewhat stooped in the shoulders—that stoop which nothing but daily work at a desk will ever produce—his gray head bent, he was followed by admiring glances, for his wealth and learning and high position rendered him an object of interest. But John Raleigh never observed or cared for the adulation of the world's people. My story will prove how unworthy at heart he was always, and the world only sneered at his person frantic.

He entered the park and made his way to a secluded corner. He had scarcely seated himself upon a bench beneath a giant tree—a favorite resort—when the sound of a shrill voice, high-pitched and piercing, fell upon his ears; one of those uncomfortable voices which rasp one's nerves and make a sensitive person frantic.

He turned swiftly, and saw a young woman stylishly dressed, accompanied by two little girls, arrayed in the height of fashion. In the background a tall, statuesque figure; a girl who looked like a marble June. A pale, colorless face, with great calm, gray eyes, full now of a haughty light; her small head wore its crown of gold-brown hair with regal grace beneath its old-fashioned straw hat. She was plainly, even poorly, dressed, but she looked like an exiled princess, as she stood pale and silent, a book in one ungloved hand.



SHE LOOKED LIKE AN EXILED PRINCESS.

"I've borne your impertinence just as long as I shall!" stormed the other woman coarsely, ignoring the fact that they were in a public place. "You are good for nothing, Grace Forester! Here I have had you for a nursery governess six whole months, and you have done nothing but get the children into trouble. Just think of it! While you stopped to read that trumpery book in your hand my two little angels were nearly run over. Come, Flossie! Come, Dora! we'll go home! As for you, Miss Grace Forester, you may go where you please! You shall never darken my doors again, only to take away your trunk. You are untrustworthy!"

"But, Mrs. Greene," the statueque began to say, "we are a stranger in this great city. Surely you will not turn me adrift to Marve? I know no one—absolutely no

unexpectedly, John Raleigh found his wife in Harold Everett's arms, while he breathed forth wild words of love and passion, and bitterly lamented the fate that kept them apart.

The old man stood and listened to the old, old story. He saw that the young man had spoken without premeditation; that no deliberate wrong was intended. He saw, too, with a cruel ache at his kindly heart, that Grace, standing downcast and silent, had no strength, no power to repulse him; and in her silence John Raleigh read his own doom.

With his bowed form trembling like an aspen, he turned away and they did not suspect his presence.

The next day he sought his wife, and in a few kind words told her of the scene that he had witnessed. She fell upon the floor at his feet, weeping and praying for forgiveness. He lifted her and stood gazing into her eyes. This grand soul was striving bitterly, fighting a hard battle, trying to crucify self. It was over; he had won the battle. Surely never did living man more fully deserve the victor's crown.

"My dear," he said, in his kindly voice, "I see the mistake that I made in asking you to be my wife. It was wrong—absolutely. Grace, I shall apply for a divorce, and set you free to marry Harold Everett. He is good and true, a better mate for you than I. Do not oppose me, I shall find some plea—some cause which the law will accept and free you, yet the world shall never blame you."

A fanatic? Perhaps so, but who shall say that old John Raleigh was not a martyr, uncrowned, unknown? To make her happy, and to undo the wrong of which his ultra sensitive heart accused him—the mistake of having made this fair young creature his wife—he was content to sacrifice himself forever. For it was only by blackening his own fair fame that he would be enabled to prove

that inbreeding is not necessarily a matter of course.

Mrs. Atchley has thought of an excellent way to haul bees. She has a wire cloth house on a wagon, and puts it in box hives of bees upside down without shutting the bees in the hives at all. After a drive of many miles it was found flying about in the wire house.

Darwin relates instances where black bees were crossed by the Ligurian bees at a distance of from one to three and a half miles, the Ligurians being the only ones in that region. Thus it will be seen that inbreeding is not necessarily a matter of course.

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More bees are lost by Wintering than by disease or any other trouble. Each stock should contain sufficient honey and bee bread. When Wintered out of doors each hive needs from 30 to 35 pounds of honey, and indoors 5 to 10 pounds less. An upward ventilation is an absolute necessity.

Germans and Italians.

Wherever civilized man has made his home, bees have been introduced. The Italian and German are the two races which have been domesticated, and the species *Apis Mellifica*, to which they belong, was not native to the American continent. Though the German race is most widely distributed, it is not more ancient than the Italian, according to Aristotle and Virgil. The reason the Germans are more numerous is supposed to be due to the energy and migration of the people of northern Europe.

The bees commended to secrete nectar about the middle of June, but the bees were in poor shape to gather it. A part of my bees were moved five miles to better pasture and prepared for extracted honey. The nuclei and a few others were left at home; the nuclei for repairs, and the others to work for comb honey. Now for results. Those that were moved averaged about 20 pounds of extracted honey; the nuclei were all Summer building up. Of the three good colonies at home, two were run for comb honey and made a total of six pounds between them, while the third one, the weakest of the three, made 25 pounds of extracted honey.

The honey season was short and very poor with me, ending by July 10. I have now been in the bee business nine years, and have experimented for six years in regard to working for comb and extracted honey. Each year's experience has brought me nearer a decision, and I am now fully decided.

Take the seasons as they average, and I can here in Vermont afford to work my bees for comb honey no longer at the present prices of the two kinds. In a series of years I get twice as many pounds of extracted honey as I can of comb honey at far less cost.

And right here I wish to say that I do not find it necessary or advisable to allow the honey to be entirely capped before extracting. I do not extract often than once in 10 days, and try to do it when the combs are about two-thirds sealed. I never judge entirely by the capping. If the combs have been filled in the hive for 10 days the honey will be ripened enough to extract, if it is not capped at all. After extracting I put the honey in 50-pound tin cans, tie a cloth over the top and set in a dry room. I never yet had any honey sour that was treated in this way. The idea that honey needs to remain in the hives more than 10 days after being gathered, or that it must be capped before extracting, is wrong, to my best judgment and belief. I do not say that some honey just gathered is fit to be extracted. I have frequently handled frames of newly gathered honey in the afternoon of a day and been bothered by the honey's running, yet these same frames containing the same honey could be handled in 24 hours, providing that they had remained covered with bees and no new honey had been placed in them, with perfect freedom and the honey would not run. If a person should take frames entirely capped that had been in the hive for a month, and extract some day when the mercury was at 90° in the shade, the chances are that his honey would be all; and no one would dare to say that it was not ripened, if they knew the facts as above stated. Heat will make honey thin; cold will make honey thick. Shall we say that the thickness or the thinness of honey shall decide whether or not it is ripe? I think 24 hours in a hive full of bees will ripen honey better than 10 days in a tub outside would; yet I think 10 days in a hive full of bees will ripen any honey that was ever gathered that was fit to be called honey.

The season broke off abruptly about July 15, and since then the bees have only been rearing brood for the Winter bees. They are all now safely in their Winter quarters in the cellar; protected by no sealed covers, but better, with burlap quilts and absorbents above them.

—*Seventy Years of Irish Life.*

One chief reason that induced me to come here was that it is a good grass country, and six years' experience has only increased my faith in the country in this respect. Stock of all kinds do well, and when the land is well seeded to our Winter growing plants will bear fruit to take plenty of time to handle them carefully. But give me a strong and hard cell dipped thick enough to be handled like a marble, if necessary, and let that be all; and then think of pressing a drone cell cup hard up against a comb in a hurry. When I wish to raise queens by the thousands I want a wax cell. We have experimented along this line pretty thoroughly, and we have settled down upon the Doolittle cell cups, using no Royal jelly, but remove the cocoons, together with the little larva, and place them right into the bottom of the cell cup, and I tell you nice, large, and well developed queens are the result.—JENNIE ATCHLEY.

From Mississippi.

EDITOR AMERICAN FARMER: I moved my family here in July, 1887, and we have lived here all the time since. I lived for 17 years before coming here in southern Kansas, in the best part of that State.

I am well pleased with the climate and natural resources of the country. I find the lands in bad condition from the system of husbandry that has prevailed for 30 years past.

Drone Cells for Queen Cells.

EDITOR AMERICAN FARMER: I see some are beginning to use drone cells for queen cell cups, and I will now give my objections. While they are not better, if as good, as a Doolittle cell cup to raise a queen in, they are too frail, too tender, to be handled rapidly, as a mashed queen cell will likely furnish a maimed queen; and a person only wishing a few cells can afford to take plenty of time to handle them carefully. But give me a strong and hard cell dipped thick enough to be handled like a marble, if necessary, and let that be all; and then think of pressing a drone cell cup hard up against a comb in a hurry. When I wish to raise queens by the thousands I want a wax cell. We have experimented along this line pretty thoroughly, and we have settled down upon the Doolittle cell cups, using no Royal jelly, but remove the cocoons, together with the little larva, and place them right into the bottom of the cell cup, and I tell you nice, large, and well developed queens are the result.—JENNIE ATCHLEY.

A Good Showing.

EDITOR AMERICAN FARMER: Last Spring I had four swarms, three good and one very poor. From the three good swarms I took 300 pounds of very nice clover honey in sections, nearly all made from clover honey which I sowed on purpose for my bees. I mixed one pound of alfalfa seed with timothy and red clover to each acre to be seeded. No honey from basswood this year, and very little from buckwheat. My bees increased to seven good swarms, by dividing the number of swarms issued.—E. O. LOUKES, Freeeland, Mich.

Soils that are formed from sediments, the settling in water, are called alluvial; those that are formed from the decomposition of vegetables, minerals, the various rock formations of our uplands, are called colluvial.

We propose to give away 100,000 watches as fast as our friends want them.

## THE APIARY.

### Humming.

After choosing a place for the bee stands do not change it.

Italians produce a larger number of bees than blacks, and so, indirectly, more honey.

To leave the bees a reasonable supply of honey for the Winter is better than attempting to feed them.

It pays to keep the best stock of bees, as well as other good stock on the farm, and by careful selection great improvement is possible.

The moth miller is a much to be dreaded enemy of the bees, but if the stock is kept strong they will not allow it to deposit its eggs on the comb.

If a colony becomes queenless and it is not desired to unite it with another, give it a frame of brood from another colony containing brood in its first stages.

There seems to be no limit to the study of bees. By the use of an observatory hive everything that goes on inside can be seen and something new learned every day.

The honey of the Malta bees is noted for its purity and delicious flavor. This is due to the extensive crop of salsify (clover), from which the bees extract most of their honey.

When the bees are building comb or raising brood they must have water, which should be placed in shallow troughs with floats, that they may not drown. If located near a small body of water, that will be sufficient.

Darwin relates instances where black bees were crossed by the Ligurian bees at a distance of from one to three and a half miles, the Ligurians being the only ones in that region. Thus it will be seen that inbreeding is not necessarily a matter of course.

More bees are lost by Wintering than by disease or any other trouble. Each stock should contain sufficient honey and bee bread.

When Wintered out of doors each hive needs from 30 to 35 pounds of honey, and indoors 5 to 10 pounds less. An upward ventilation is an absolute necessity.

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Established - - - 1819.

75TH YEAR.

THE AMERICAN FARMER.  
"O fortunatos sumus ma si bona novit optima."—VIRG.

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## OUR PORTFOLIO OF PICTURES.

We call the attention of our readers to our advertisement on the third page, of the views "Sights and Scenes of the World." This issue will contain coupon for Part 2, which can be had by cutting the coupon out and sending it, with your name and address and five two-cent stamps, to the Coupon Department of THE AMERICAN FARMER. Those who have not ordered Part 1, coupon for which appeared in our recent issue, can secure it by cutting the coupon out and sending it, together with 10 cents. None should delay in sending in their orders, so as to secure the complete set of 20 parts.

Remember, it costs but 10 cents each part if the coupons are sent.

Any one wishing to secure any particular part, which they have failed to send coupon for, can have the same upon the receipt of 25 cents. We trust that our readers will take advantage of this great offer, and secure all the parts as they appear each issue.

LAST year the tobacco growers of the Connecticut Valley received \$6,000,000 for their crop. They believe that the reductions proposed in the Wilson Bill will mean the ruin of three-fourths of them, and they are fighting the bill with all the strength they can muster. They rely on Representative Sperry, a Democrat, to lead the fight for them in Congress, and that gentleman has written them:

I seriously doubt whether the (Wilson) bill, as at present reported, will pass the House, and I am in hopes of getting the (tobacco) tax restored, as originally contained in the McKinley law.

## OUR CLUBBING LIST.

The American Farmer Will be Sent in Connection With Any Other Paper or Magazine.

We will send THE AMERICAN FARMER and any other paper or magazine in the country at a reduced rate for the two. The following is a partial list of the periodicals that we club with:

Name of Periodical.	Regular Price.	With the American Farmer.
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Reform	1.00	1.25
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Address \_\_\_\_\_

CUT THIS OUT.

TO THE FARMERS  
OF THE  
UNITED STATES.

We are to-day facing a crisis the like of which has never before happened in the history of the country.

In every previous panic in our history—and notably that of 1873—the farmers have raised the country out of the Slough of Despond by growing great crops, for which they got good prices.

A combination of the plots of the politicians, with adverse natural conditions, prevents them rendering the country the same great service to-day. Adverse natural conditions reduced last year's crops below the average. The plots of politicians prevent the sale of what was raised at fair prices. With actually less wheat in the country than our people will need for consumption before next harvest time, the price is yet the lowest ever known in the history of American markets. With not half enough wool in the country that is necessary to clothe our people for the coming year, there is yet no sale for the hundreds of millions of pounds sheared from our flocks last year. Millions of dollars' worth of tobacco, which last year would have met with a ready sale for cash, this year lies unsought, unsold, and unsellable in the warehouses and sheds, where it loses weight and value and accumulates expense. Cotton is phenomenally low. With but half a crop of rice the price is down below the bottom. The same is true of every other farm product—almost without exception.

This condition of things greatly prolongs and aggravates the panic. No matter with what sophistries the politicians may attempt to delude the public, one stern fact cannot be denied, and that is: *There can be no revival of prosperity until there is more money in the pockets of the farmers.*

The return of prosperity must begin with the farmers. It cannot begin with any other class and extend to them. One-half of our population depends upon agriculture for their living, and the other half depends upon them.

In the face of these overwhelming facts, the iniquitous Wilson Bill has struck a deadly blow at the interests of every farmer in the country. Not content with ruining the home market for the great staples, it has carefully sought out every secondary product upon which farmers were making profits, and stripped all chance of lucrative returns from them. It has ruined the value of 350,000,000 pounds of wool and 45,000,000 sheep, which the farmers last year rejoiced in as wealth. To-day not a pound of all these millions of pounds of wool and all these millions of sheep is salable except at a ruinous sacrifice.

The value of every pound of rice, tobacco, butter, cheese, sugar, every bushel of barley, potatoes and fruit, every dozen of hay, hemp and flax, every dozen of eggs, every crate of vegetables in the whole country is to-day held in doubt because of the threatened injuries of the Wilson Bill. Nobody wants to buy goods produced by the highest-paid labor in the world.

Therefore, it is in the highest degree unjust to the farmer to rob him of a great portion of his profits under the pretense of still further benefiting the workingman. At best it is only a miserable sham and pretense. Taken through any period of years the American farmer has been content to sacrifice to swell the profits of the wealthy trusts and combinations, all mostly owned and controlled in England, which make beer?

If you are a fruit grower, and think that the orchards and groves of this country should not be sacrificed to those of pauper foreigners, get four of your fellow-farmers to club with you in sending \$2 for five yearly subscriptions to your friend at the National Capital—THE AMERICAN FARMER.

Still more important: if the American production of eggs, tobacco, poultry, butter, cheese, and vegetables be destroyed, where is there to be found a market for the workingman's products? He can only sell them to our own farmers, and if the farmers have nothing to buy with, what becomes of him?

The Wilson Bill is a mass of irritating folly that begins with the unprincipled sacrifice of the farmers, and will bring about the ruin of the whole country.

JUSTICE has at last overtaken a particularly mean swindler, who has been robbing farmers' wives and daughters of their little earnings. James A. Bain, the "black pepin" fraud, of Zanesville, Concord, and several other places in Ohio, has been sentenced to three years imprisonment and a fine of \$300. It will be 36 months, therefore, before he can spring another scheme to cheat farmers.

Brother farmers, do not delay acting. Whatever is done must be done at once to prevent the passage of the bill and the robbery of the farmers.

## COLD COMFORT FOR THE FARMERS.

The Philadelphia Times, one of the loudest clamorers for Tariff Reform, is frank enough to admit that the Wilson Tariff is intended to cut down the profits of our own farmers for the benefit of the town people. It says editorially:

"There is no more fertile region in America, nor upon the face of the globe, than the Canadian Province contiguous to the St. Lawrence River and the ocean. They produce wheat, rye, barley, fowl, eggs, butter, apples, horses, and cattle in great abundance and of superior quality. By placing these farm products on the free list the Committee on Ways and Means will give to barren New England those products which have hitherto been less than right."

These words are from the *Philadelphia Times*.

It is a frank admission by one of the leading supporters of the bill of the very viciousness for which we have denounced it. It frankly avows that the expected effect of the bill is to take away a profitable market from our own farmers

—our own tax-payers—and give it to

foreigners, who bear none of the burdens

of our Municipal, State, or General Governments.

Nothing can be more outrageous to common sense than the mere statement of such a thing.

It is impudent demagogery—an attempt to catch the workingman's vote by a sham pretense of reducing the cost of his living at the expense of those who give him his living by buying the products of his labor.

It is absolutely without an element of justice. As we have repeatedly said, the farmer owes the workingman—the townsman generally—absolutely nothing.

The farmer has always given the townsman all the great staples of life—the things which constitute the bulk of his expenses—much cheaper than the townsmen of Europe can buy them. The price of bread and meat has always been as much less than the same in Europe as the cost of transporting the same to Europe and selling them there.

For example, the price of red Winter wheat in London is 27 shillings a quarter—equal to about 84 cents a bushel.

The same is worth 60 cents a bushel in Chicago, or 24 cents cheaper to the resident of Chicago than to the man in London. That is, the Chicago man gets his flour about \$1.50 a barrel cheaper than the London man. There is the same difference in the cost of meats, corn and oats and hay for their horses, etc. As a rule, fruits and vegetables have been cheaper in the same ratio. Taken all through the American workingman's dollar will buy fully one-half more good, wholesome food than will the Englishman's four shillings, the Frenchman's five francs, or the German's four marks.

While thus taking the lowest prices for his own products, the farmer has been paying the workingman the highest prices for the products of his labor. While giving the townsman a greater variety of cheaper and better food than any other townsman in the world has, the American farmer has been content to remain so for an indefinite period, the home market loses hope. When buyers have no work and no money, sellers naturally grow despondent.

BRINGING in cheap foreign barley will reduce the market for corn now extensively used in making beer. No business in this country is so profitable as that of brewing. The consolidated brewers have recently paid a big dividend even in these hard times to their English owners. Why should the barley and corn growers be sacrificed to further swell their profits?

THE duty on barley has been of the greatest possible benefit to the country and has developed the production of that cereal with astonishing rapidity. Why should the farmers who raise it be sacrificed to swell the profits of the wealthy trusts and combinations, all mostly owned and controlled in England, which make beer?

If you are a fruit grower, and think that the orchards and groves of this country should not be sacrificed to those of pauper foreigners, get four of your fellow-farmers to club with you in sending \$2 for five yearly subscriptions to your friend at the National Capital—THE AMERICAN FARMER.

IF YOU feel that free eggs, butter, cheese, poultry or vegetables will be an injury to you, help defeat the Wilson Bill by sending \$2 for subscriptions of yourself and four neighbors to THE AMERICAN FARMER.

IF YOU believe that the farmers of the country should not be crucified by the Wilson Bill, get four of your neighbors to join you in sending \$2 for five yearly subscriptions to THE AMERICAN FARMER.

IF YOU are a wool grower, get four of your neighbors to join you in sending \$2 for five yearly subscriptions to THE AMERICAN FARMER.

IF THE AMERICAN FARMER can have a club of only five from every Postoffice in the country it can and will defeat the Wilson raid upon the farmers.

## THE WAY TO HELP.

The best way to help in the great fight against the robbery of the farmers by the Wilson Bill, is to be enrolled in the great army of THE AMERICAN FARMER. Every subscriber to it will be a decisive protest against growing iniquity.

THE AMERICAN FARMER is determinedly opposed to the agricultural schedule of that bill, and will fight it to the bitter end.

Every farmer who objects to being slaughtered, everyone who is now suffering from the threats it makes against him—and this includes every man in the United States who lives by tilling the soil—should put himself in definite opposition to it, by subscribing for THE AMERICAN FARMER, and giving it what assistance he can toward defeating the bill.

The paper is fighting for every farmer in the country. It earnestly believes that not one of them is making too much money, but all too little, and it is bitterly hostile to whatever threatens to reduce their incomes.

It is here, in the Capital of the Nation, where it can make the fight to the best advantage, and do the most to save the farmers from the threatened injury.

It should have a club in every neighborhood. Every farmer interested in this great fight should do what he can to help win it by getting up a club of his neighbors for the paper. Let him at least get four of his neighbors to join him, and send us \$2, for which we will send five copies of the paper for one year.

This is a very small contribution to make in aid of a fight in which they have so great a stake, and in which THE AMERICAN FARMER is doing such effective work. No other paper in the whole country is doing nearly so much to defeat the wicked Wilson Bill. Let it be loyally supported by the millions who have a direct dollars and cents interest in the struggle.

LAST Friday, May wheat reached the lowest point ever known in the history of the American grain market. In New York it went down to 70 1-10 cents and 64 1/2 in Chicago. The slump was said to be caused by heavy holders of grain who had become tired waiting for a rise and threw their holdings on the market. This last slump is undoubtedly entirely due to the Wilson Bill. There is no more wheat in the country than in ordinary times, our own people would want for breadstuffs and seed. But with millions of men out of work, and likely to remain so for an indefinite period, the home market loses hope. When buyers have no work and no money, sellers naturally grow despondent.

BRINGING in cheap foreign barley will reduce the market for corn now extensively used in making beer. No business in this country is so profitable as that of brewing. The consolidated brewers have recently paid a big dividend even in these hard times to their English owners. Why should the barley and corn growers be sacrificed to further swell their profits?

IF YOU are going into the mutton business, and I bought a flock of sheep last week for \$300 that a year ago would have cost me \$600. So you see, the Wilson Bill put \$300 in my pocket.

But how about your brother farmer, out of whose pocket it took that \$300?

"Well, I'm not looking out for him.

It's as much as any man can do to look out for himself."

IF YOU are going to do anything against the farmer robbery contemplated by the Wilson Bill, you must act at once, as it is the intention to force the bill through this month. Begin operations by sending in a club of your neighbors to THE AMERICAN FARMER.

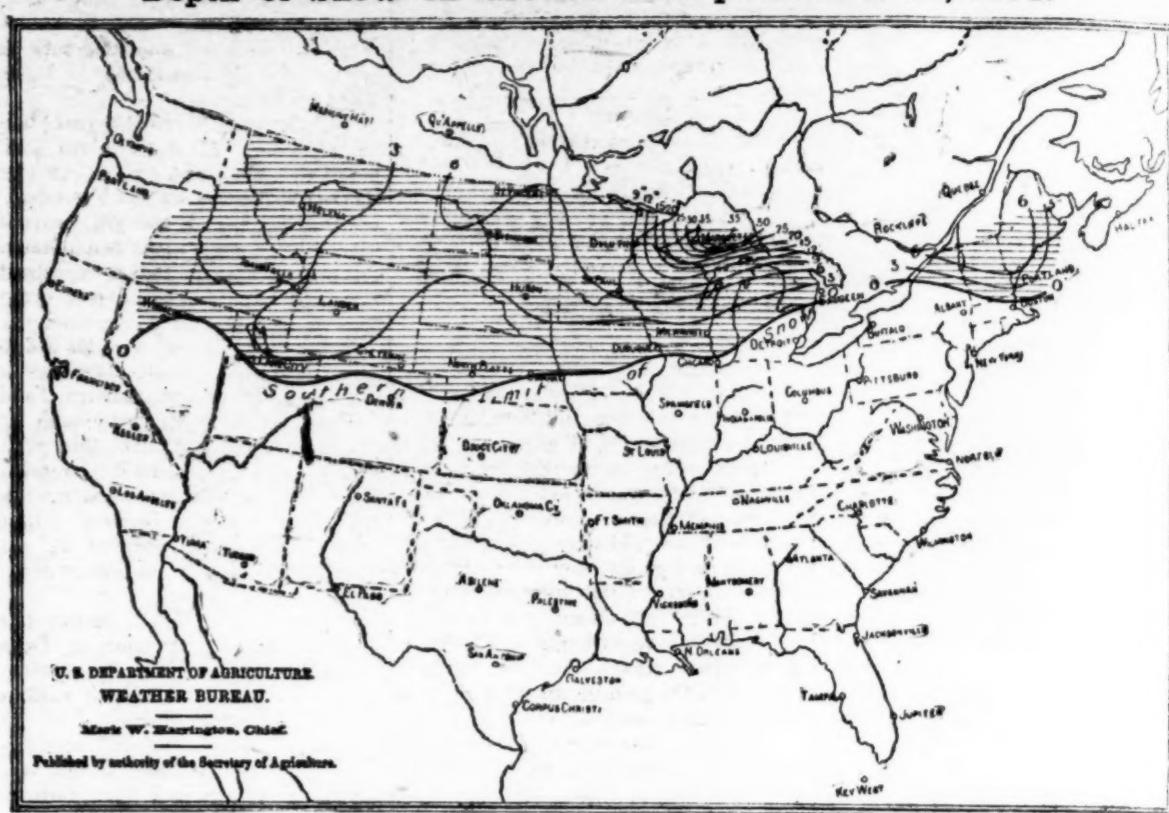
THE AMERICAN FARMER is the only great agricultural paper which is fighting every portion of the Wilson Bill that will injure farmers. It has the interests of every farmer in the country at heart, no matter what his special line of production may be.

THE best Farmers' Protective Club is one to THE AMERICAN FARMER. If you can get four of your neighbors to join you, the yearly membership fee will be only 40 cents apiece.

THE Wilson Bill goes on the old principle of taking from those who have little or nothing, and giving to those who have much.

IF THE AMERICAN FARMER can have a club of only five from every Postoffice in the country it can and will defeat the Wilson raid upon the farmers.

## Depth of Snow on Ground at 8 p. m. Dec. 25, 1893.



## OUR 75TH YEAR.

With this number THE AMERICAN FARMER begins its 75th year of life and usefulness to the farmers of America.

It is the pioneer of the agricultural press of the Nation, and can point with pride to a longer career of usefulness than any one of them. And it can say, with entire truthfulness, that never in all the long years that it has represented and ministered to the husbandmen of America has it been so useful to them as it is to-day, when it is leading in a great fight to defeat the cruellest wrong ever attempted against them.

This is a very small contribution to make in aid of a fight in which they have so great a stake, and in which THE AMERICAN FARMER is doing such effective work. No other paper in the whole country is doing nearly so much to defeat the wicked Wilson Bill.

WEILY FARMER has done the cause of progressive farmers a lasting service in publishing Mr. Terry's life story. Mr. Terry, who is well known to farmers in every part of the country from his steady contributions to various agricultural papers for 10 years past, lives on a small farm in northern Ohio, and this book of nearly 400 pages tells how he began under discouragements that would have taken all heart from the majority of men, and in 10 years worked out his financial independence and reached a position of comparative wealth. There are but 45 acres in the Terry farm, and of these 10 acres are not tillable. Mr. Terry has not undertaken peculiar and novel experiments which require capital or expert knowledge. He began without capital. Indeed, he was worse than that; he had \$3,700 of debt, had to borrow an almost unmanageable horse, and had nearly no tools to work with. His entire labor till the first year was \$400. His land was not good land. Tenants had never been able to turn

## PASTURES

Experts' Ideas as to  
the Management and  
Development.

A RECENT meeting of the Bothwell Farmers' Society, in Scotland, Prof. A. N. McAlpin delivered an address on the management of pastures, which has attracted much attention. He said that the great thing to be aimed at in a good pasture was to have the land well filled with roots. They might work away as long as they liked, but until they mastered that problem they would never get a satisfactory pasture. The roots should also go as far down as they could get them. What was the use of a man paying for, say, 18 inches of soil and only using nine of them. Let them go as high as they liked with the leaves and blades, but let them also go down with the roots. The watchword of the successful pasture manager should be, up and down as far as they could get. As Botanist to the Highland Society, he had gone through and examined many of the very best pastures in the country, and the thing that struck him more than any other thing was the depth of the roots of some of the finest pastures. The farmers simply would not believe him as to the depth to which many of their grasses would grow. Getting a good sward of grass was not the only consideration that weighed with them in having deep-rooted grasses. They had also to consider that when they had the soil well filled with deep-rooted grasses, they had thereby ready to their hand a series of most valuable workers in the preparing and improving of the land. Cockstoot was one of the deepest rooted of their grasses, and even though it had been worth next to nothing for feeding purposes, he would say put it in, for it would go down and make a splendid tiller of the soil.

## MEADOW FESCUE

was another very good deep-rooted grass, and so also was timothy; but in buying these and other seeds, they should be sure that they got what they wanted, for in many cases the seeds were so like each other that, unless they were experts, they would hardly know the difference between them. The result of this was that the seedmen had a great temptation to make up their costlier seeds with considerable quantities of smaller-priced seeds, and pocket the difference.

Of the bottom grasses, perennial ryegrass was one of the most valuable. For a mixture, Italian ryegrass might also be used to some extent; but it had to be handled with great care, for it was such a broad-leaved plant and such a quick feeder that if too much of it was sown it would come up before the other grasses had got a start and crush them quite out. The ideal pasture was one in which there was a judicious mixture of the deep and shallow-rooted plants. When they had that they got what was practically a perpetual motion in the soil—the one class of roots coming up as the other died out. Farmers did not take nearly the interest in their pastures that they ought. They would all insist on having the very best of cattle, horses, and sheep; but, in the matter of grasses, they trusted to Providence, or rather trusted in the seed merchant, who, of course, gave them what he liked. How would they like to trust for their dinner to some other man who did not know what their tastes or requirements were? No plant grew unless from seed, and unless they put the best seed in the land they could not expect to get the best possible crop. The grasses that they wanted in a pasture were the grasses that would feed animals. The grasses from which animals could extract nothing ought, of course, to be avoided, and in this connection they should guard against the hairy-leaved grasses, and also the excessively woody grasses. It was also im-

portant that

West Point Cadets

EDITOR AMERICAN FARMER: 1. How long do the Cadets at West Point have to stay? 2. What is required of them? 3. How are they appointed? 4. What are the qualifications necessary to secure an appointment? 5. What compensation do they receive? 6. When are they appointed; and in short, all about them?—READER, Whitesburg, Pa.

THE SELECTION OF GRASSES

to go as much for flat in preference to round grasses as possible. The latter were liable to be greatly destroyed by the tread of the animal. Perennial ryegrass was one of the best examples of a flat grass. It would stand any amount of treading; indeed, treading seemed to do it more good than harm. Notwithstanding the opinion of many practical farmers, expressed to himself, he might say that all grasses took pretty much the same food materials, and in somewhat similar proportions. What was good for one was good for all. Clovers, however, wanted a diet different from grasses. Above everything else, clovers must have a compound of potash. Potash was the keynote of clover-growing, and where they had a soil with plenty of potash they had a good crop of clover.

Grasses, on the other hand, wanted nitrogenous matter, and that was why grasses grew so well after turnips, the nitrogenous compounds which were left by the manure which had been applied to the turnips favoring them. Clovers also wanted a good supply of lime compounds—not that it fed on lime compounds, but that the compounds acted as an antidote to some of the noxious matters which the plant used in building up the substances in its body. One thing else very necessary for clovers was phosphates, and they need not be soluble. Clover had the power of dissolving the phosphates for itself, as was proved by the fact that it would grow on the face of railway cuttings, where they would hardly expect much soluble phosphate. There was no nitrogenous compound there either before the clover started; but immediately it did so, it turned out these compounds and the grasses came in and took up the space. For the feeding of pasture grasses, therefore, they must use nitrogenous compounds. But the

compounds would not have to be soluble, or the grass would get away too quick and choke the clover. The equal feeding of the whole of the plants comprising the pasture was the point to be aimed at, and this could only be done by applying the manures at different times and in stated quantities. In laying down a new pasture, part of the manure should be applied when the land was being prepared, and the remainder after the roots had got a start. In the latter case, however, they should be certain that it was applied before the bottom grasses had got so thick and close on the ground as to prevent the manure getting down to the deep-rooting plants. If the shallow-rooted plants picked up all the manure, the deep-rooters would, of course, suffer, and without these, as he had already said, they could never have been a really good and satisfactory pasture. In the manuring of their old pasture lands, the same thing held good; they must get the manuring down to the deeper rooted plants if they were to do any good. The close blanket covers frequently formed by the surface grasses must be made penetrable to the manure, and this could either be done by making holes at regular intervals, or by burning out spaces by means of a dressing of quicklime.

## The Gulf Coast.

EDITOR AMERICAN FARMER: I live on the Gulf of Mexico, 85 miles east of New Orleans and 25 miles west of Mobile, on the Louisville & Nashville Railroad, which is the trunk line from Mobile to New Orleans, and takes the travel through from the Mobile & Ohio Railroad and around all the vast territory from Florida and New Orleans and the East to the South. We have the loveliest climate on the globe. We are entirely exempt from overflow, tornadoes, or cyclones, and they do not occur this near the Gulf, as all the overflow we have here for 10 miles back is tide water.

Our timber lands are fine in Alabama and Mississippi, and our land is very productive for the cereals and vegetables, and as a fruit country it has no equal. Our pears this year is a perfect crop. I know one orchard of 100 trees, LeConte pears, been planted 11 years, will yield 1,200 bushels. The pears, peaches, grapes, and figs are a perfect success.

We have no trouble in raising on our soil three or four crops on the same land in a year; we can, in word, plow and plant every month in the year. When a crop should fail, all we have to do is to plow and plant again. For a grass country we have no equal in my knowledge. Our sheep live and do well here the year through, and we have the best wool growing in America as soon as we can get Northern men to come here to manage the industry. While people in the North are raising wool on land worth \$50 to \$100 per acre, here our pastures is free in a great measure, at least, for the land can be purchased at from \$1 to \$5 for fruit growing and sheep ranches.

The country is fine for growing mules, which will be a fine industry as soon as it is found out. I lived here on this Gulf coast for eight years, and here we have the only perfect Summer and Winter health resort in America that I ever found. Take from Mobile to New Orleans, a distance of 145 miles, and for 20 miles back from the Gulf, and I am prepared to say that there is no health resort like it. I came here from the North eight years ago, not for my health, but my friends told me that I would not live six months. Well, I am in my 84th year, and I can say I have not missed one meal with sickness since I came here.—WM. SIGEOR, Ocean Springs, Miss.

## West Point Cadets

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1. Four years.

2. To act like gentlemen, and attain a proficiency in military science.

3. One from each Congressional District, Territory, and the District of Columbia, and 10 at large. The first named are appointed by the Secretary of War on the recommendations of the Representatives or Delegates; the latter by the President at his discretion.

4. To be between the ages of 17 and 21, have perfectly sound bodies, and education sufficient to admit them to a college course.

5. They get \$500 a year and one ration, against which are charged board, clothing, books, stationery, etc.

6. The 10 at large are appointed each year. The others whenever there is a vacancy in the college from their District or Territory.—EDITOR AMERICAN FARMER.

## Scrofula

Disease Germs living in the Blood and feeding upon its Life. Overcome these germs with

## Scott's Emulsion

the Cream of Cod-liver Oil, and make your blood healthy, skin pure and system strong. Physicians, the world over, endorse it.

Don't be deceived by Substitutes!

Prepared by Scott & Bowes, N. Y. All Druggists.

## RETROSPECT OF THE SEASON.

## The Plentiful Crops and Scarcity of Money Discussed.

T

HE END of this year's harvest in northeastern Ohio has come, and let us now invoke the year's results.

In 40 straight years of farming here I never saw a better season of farm crops. We had an excellent growing season; rain fell almost every week, and the hay crop was immense. It sells for ready cash at from \$9 to \$10 per ton, net price. Potatoes were never a better crop here; larger than usual and sound and healthy to the core, with no holes in the center of them this year. Forty-five cents per bushel is the market price in this city, and the main crop is nicely stored away in farmer's cellars waiting for the better price of \$1 per bushel, sure to come in March or April next.

From Detroit to Buffalo the first tier of Counties of the south shore of Lake Erie is largely devoted to grape-growing, small fruits, and horticulture of various kinds. The extraordinary yield of grapes this season far exceeded any former crop, and the just and honest law of supply and demand that farmers champion so strongly forced down the price to one cent per pound, all nicely put up in 10 to 20 pound baskets, and with such an abundant crop we all made money. Peaches were so plentiful that good, large, luscious peaches sold freely upon the trees in the orchards as low as 50 cents per bushel, while the poorer ones and windfalls as low as 25 cents per bushel; but the main crop when picked and nicely marketed in half-bushel baskets netted us from \$1 to \$1.50 per bushel.

MARYLAND.

The State Grange met in Baltimore Dec. 13, 14, and 15. Worthy Master H. M. Murray, of Anne Arundel, presiding; Wm. S. Sands, of Baltimore, Secretary. About 60 subordinate Granges were represented. Master Murray's address criticized Secretary Morton sharply, and also the Wilson Bill. It urged special attention to State assessment and taxation, good roads, and special efforts to increase the membership of the Grange. The report of Treasurer May showed a balance on hand of \$900. There has been no increase or decrease in the membership.

A resolution was passed protesting against the suggested policy of the Secretary of Agriculture in stopping appropriation to agricultural experiment stations and the distribution of new and valuable seeds.

The officers elected and installed were: President, H. O. Devries, of Howard County; Overseer, J. B. Ager, of Prince George's County; Lecturer, James B. Robinson, of Anne Arundel County; Steward, C. Lyon Rogers, of Baltimore County; Assistant Steward, Thomas B. Todd, of Baltimore County; Chaplain, C. J. Burdette, of Montgomery County; Treasurer, N. P. Manly, of Cecil County; Secretary, Wm. S. Sands, of Baltimore; Gatekeeper, William E. Brown, of Montgomery County; Curator, Mrs. H. O. Devries; Flora, Mrs. A. Washington Stevenson, and Lady Assistant Steward, Mrs. L. M. Corey.

MASSACHUSETTS.

The 10th annual exhibition of the Eastern Middletown Poultry Association was held at Malton, beginning Dec. 21. It was the best exhibition that has ever given.

MICHIGAN.

The Michigan Grange held its 21st annual meeting in the State House in Lansing Dec. 13, 14, and 16, with Worthy Master Morton presiding. In his address he spoke of the lecture system which had been adopted at the last meeting of the State Grange had met with a great deal of success, but not quite so much as had been anticipated, owing to some misunderstanding as to methods and instructions. During the year 40 counts had been visited and over 200 lectures delivered, at an expense to the State Grange of about \$338. The taxes of the State were badly adjusted that the farmers paid more than their share. The Grange should place itself on record as favoring the enactment of a law similar to the mortgage tax law of 1891. The Michigan Agricultural College should receive the support of all farmers. It is gratifying to note the establishment of a course in agriculture. Farmers should let no opportunity pass to present the insult offered them by the present Secretary of Agriculture.

Miss Jennie Buell, Secretary, reported that there were 226 Granges in the State, with a membership of 11,000, a slight advance on that of one year ago.

Resolutions were adopted favoring a uniform system of text books, the co-operation of subordinate Granges with school commissioners, the visitation of schools, the appointment of a standing committee on education, the extension of the reading course as adopted in Oceana County, and induced the farm home reading circle. Also favoring the free rural mail delivery, the enactment of a general law under which all cities and villages can incorporate, thus expediting business; the Legislature; election of U. S. Senator Samuel M. Dibble; a direct vote of the people and condemning the "unproven, malicious, disrespectful and false language" of Secretary of Agriculture Morton, and endorsing the action of the National Grange on this subject.

Reports were adopted advocating that civil cases be settled by a three-fourths vote of the jury; that farmers and manufacturers be placed on a level in tariff legislation; asking for further legislation to control trusts; favoring equal conditions for suffrage for men and women; calling for legislation that will aid the Food Commissioner in preventing adulteration and securing pure food, and asking for facilities at the Agricultural College so that women may be admitted.

The old Administration protection policy was perfection, but their contraction of the volume of money was wicked and unbearable. To-day 67,000,000 of our American people are trying to do the business of this country with less money than 33,000,000 population did in 1865 and 1866. It can't be done, and the Administration is yet to be born that can sit securely on the throne of Government of this great people that will not grant us both a sufficient volume of money and high protection of all our industries. We never had too much money in any period of our Government existence to injure or jeopardize the interests of our poor people and wage earners. Labor is happier under an abundant call for work even with pay in cheaper money. We need an elastic volume of money; one that can readily adapt itself to meet all demand. We need to break the rich and the poor poorer.

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Among the closing acts of the Grange was the adoption of a special report of its Executive Committee for a system of co-operative business methods, presumably on a similar plan as the National Union, although it has not been determined upon. It also committed the Order to the idea of conducting mutual fire insurance companies under its auspices, but a proposal to also include life insurance was rejected.

The State Live Stock Breeders' Association met at Lansing Dec. 20. President George H. Beck, in his annual address, contained the attack made by the State Grange upon Secretary Morton for his alleged lack of sympathy with the agriculturists. Papers were read by Wm. Ball, of Hamburg; Dr. Manley Mills, of Lansing, and Prof. Eugene Davenport, of Woodland.

The following officers were elected by the Galloway Stock Breeders' Association: President, George Coleman, Howell; Vice-President, G. McQueen, Millington; Secretary-Treasurer, Henry Grinnell, Jr., Franklin.

The Lincoln Sheep Breeders elected J. J. England, Cairo, Mich.; President; T. G. Gibson, of Durfield, Ontario, Vice-President; and J. T. Daniels of Eliza, Mich., Secretary and Treasurer.

The following resolution was adopted:

It is proposed by the Wilson Tariff now before the Congress of the United States to impose a heavy duty upon the imports of tea, coffee, and other articles, and we regard this as very prejudicial, if not fatal, to the interests of the stocks and herds of the nation, upon whom time and money have been expended to build up and improve. It is hereby resolved by the Stock Breeders' Association that we ask the Congress to prohibit the importation of tea, coffee, and other articles, and we propose that they be given the same consideration as to the personal appeals of the manufacturers.

NEW HAMPSHIRE.

The State Grange met at Manchester Dec. 19. Worthy Master N. J. Bachelder presiding. In his annual address he said that 14 subordinate Granges had been organized during the year, making the total number in

## FARMER MEETINGS.

## State and Subordinate Granges, Institutes, etc.

TIKES.

The State Grange passed resolutions favoring free silver and the purchase by the Government of a line of railroad from the Atlantic to the Pacific, paying for the same in legal tender notes.

INDIA.

The following officers were elected: Master, Aaron Jones, South Bend; Overseer, Joel Davis, Columbus; Lecturer, T. J. S. Robinson, Cleveland; Steward, Hiram Dunham, Hinsdale; Secretary, J. H. Walker, Adams; Treasurer, J. W. Holmes, Cortland; Executive Committee, T. H. Wallington, of Madison; John Tilson, of Franklin, and L. S. Fitch, of Oakwood.

IOWA.

The Fine Stock Breeders' Association elected the following officers:

President, W. W. McClung, Waterloo; Vice-Presidents, J. P. Manastrely, Fairfield; Richard Baker, Jr., Farley; John Cowine, South Anna; W. B. Barney, Hampton; Prof. C. F. Curtis, Ames; W. W. Vaughn, Marion; H. Parsons, Newton; C. C. Norton, Corning; F. R. Shafer, Campbell; L. S. Coffin, Fort Dodge; A. J. Benson, Sanborn; Secretary and Treasurer, G. W. Franklin, Atlantic.

MISSOURI.

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## Uncle Silas's Religion

Uncle Silas has recently joined the church, and Uncle Silas needed it if anyone did. One day he stopped at my gate to ask about the cook's health.

"How about your joining the church, uncle?" I asked, after I told him the cook's health was fair.

"I've done done it, boss," he replied, proudly.

"How about having religion and chickens at the same time?" I said, jokingly.

"De good Lawd will pervide, honey," he answered, piously.

"Religion, probably, but not chicken," I ventured.

"Yes, honey," and his eyes twinkled, "de good Lawd is gwine ter hep dem dat he's de selves, an' Ise ablebodiy, t'ank de Lawd."—Detroit Free Press.

## The Way He Wanted to Die.

A peasant lad who, when asked by a gentleman how his father was, replied:

"Ah, my poor father died last Wednesday, your honor."

"I'm sorry, indeed, to hear it," said the other. "It must have been very sudden. What doctor attended him?"

"Ah, sir," said the boy, "my poor father wouldn't have a doctor; he always used to say he'd like to die a natural death."—Seventy Years of Irish Life.

## Quite Plain.

Phrenologist—You have been married some years.

Patient (in surprise)—By George! That's true. How could you tell?

Phrenologist—Your bump of hope is dent. Puck.

## Another Kind.

Young Wife—I took great pains with that cucumber salad, John, and I hope you enjoyed it.

Husband (anxiously)—I'm afraid, my dear, that I took great pains with it, too. —Pearson's.

## That Man Got Off.

Judge—What sort of a man, now, was it you saw commit the assault?

Policeman—Sure, your honor, he was a small, insignificant man—about your size, your honor. —Vogue.

## His Letter.

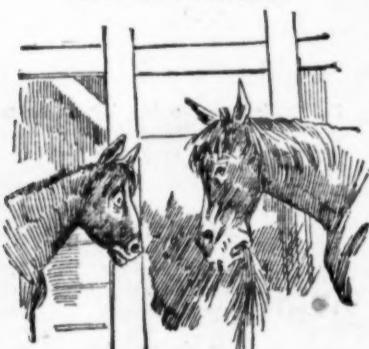
DEAR FATHER: I have found work at last—even sooner than I expected, and with a friend that sticks to me always, and with whom I spend many hours.



My work is a little confining, but I have my evenings to myself. You will be pleased to hear that I am thrown with men who have been in the custom of handling money and valuables, and also that my presence was earnestly sought after.

Your loving SON,  
P. S.—My friend has a well-rounded character.

## A Maternal Rebuke.



Colt—Did you ever have the hay-fever, ma?

Ma—Neigh, my son; but if you get off another one like that you'll have an attack of mal-de-mare.



He (passionately)—Do you ever think of marriage?

She (frankly)—What else does a girl have to think about?

## THE DAIRY.

## Skimmings.

Corn is the most prolific crop for fodder we can grow. A yield of 20 tons to one acre is easily made, and as one ton feeds one cow for 40 days, nine tons will feed one for 365 days. Thus, two cows may be fed a whole year from the produce of one acre, or four cows through a whole Winter. And the food is far more nutritious than grass of the best kind, as the 20 tons of stalks have at least one ton of grain, or possibly two tons, in them.

A recent decision of the Supreme Court of Minnesota places in the hands of the dairy interests of that State a powerful weapon with which to combat the butterine fraud. The Legislature of 1891 passed a law providing that all butterine sold in the State should be colored pink, under penalty of \$50 for the first offense and \$100 for each subsequent one. The butterine sellers took the ground that the law was unconstitutional and resisted the collection of the penalty on that theory. Now, however, Judge Collins, of the Supreme Court, decides that the requirement relating to coloring butterine pink is "valid as a legitimate exercise of the police powers of the State."

One objection to silage for feeding cows is that it is not a fully perfect feed, wanting in nitrogenous matter. This, however, is supplied by adding to the silage some wheat bran and linseed or cottonseed meal, 50 pounds of silage with eight pounds of bran, and two of linseed meal gives the best possible ration, having a full quantity of all the elements required for a yield of 300 pounds of butter a year, and costs only 14 cents a day. As compared with a herd fed on dry cornfodder, with an equal quantity of grain food, and which averaged 210 pounds per cow for the year, at a cost of 11 cents per day, the silage has the best result: by 90 pounds a year, worth \$25, against the extra \$10 for the food. The difference is well worth saving.

President Gilbert, of the New York Dairy Association, says this is the way to make premium butter: "As soon as the milk is brought into the creamy state it is put into Cooley cans, 12 per cent. of water added hot enough to raise the milk to 98 degrees, and is then put into the tanks and cooled down to 45 degrees and sets for 11 hours. The cream is ripened for 24 hours, being first warmed up to 70 degrees in Winter. I churn in Winter at 68 degrees and in Summer at 65 degrees. As soon as the butter separates I add cold water to the mass to crystallize the grains, then draw off the mixed buttermilk, add more water until the water shows no trace of buttermilk.

AVING been born and brought up a farmer in western New York, I thought I had become quite well versed in farm management when I had attained the age of 40 years. But not until I became the possessor of a village lot of five acres, which I now occupy, have I learned the importance of proper management of land for profit.

Some 20 years ago I came into pos-

session of this village property, and as I intended to make the same a permanent home, I questioned the propriety of keeping a cow, as had the former occupant. I will say in explanation that one and three-quarter acres of the lot were devoted to highway purposes, garden, house, barn, apple orchard and adjacent grounds for yard purposes. The central and rear part of the lot, containing three and one-quarter acres, was clear of any obstruction.

This had formerly been the cow pasture. On mature reflection I decided to set this out in hops, as that commodity had recently touched 75 cents per pound and was likely to reach \$1 before another harvest.

Three years later found me with the hop fever entirely off. My first crop of hops was a light one, and sold at 25 cents per pound; the second and last one, hard and dull at any price. A year or two later I disposed of them at \$1 per bushel. Profit and loss in the hop deal resulted in a large experience for the amount of land under cultivation, and a lack of moral courage to even attempt to strike a balance.

Fruit growing next engaged my attention. I set 468 Dwarf pear trees in the Spring of 1878 and 1879, and in the Spring of 1884, 198 German Prunes. Three years later I set a few peach trees, and in the Spring of 1891, 30 more German Prunes and 30 Italian Prunes. In 1892 I planted 30 Early Richmond cherries, and last Spring 75 standard pear trees, consisting of Bosc, Clarendon, and Bartlett. Now, nearly or quite all of these trees stand on three and one-fourth acres of ground, the distance between rows and trees being 13 feet. Because the trees were planted at intervals, the yield of fruit has not been very great. It is a better plan when planting fruit trees to set the whole plot at once. The greater proportion of these trees, however, are of bearing age and have many times paid for themselves and the land they occupy in profits resulting from the sale of fruit.

The local Governments had attempted to check its spread, but found themselves unequal to the great emergency and the provincial authorities were appealing to the National authority for assistance. In Russia, according to Prince Galitzin, there was but one way to cope with this terrible pest, and that was by attacking it early in the Spring when it first appeared with other vegetation and either digging it up or pulling it from the ground. If left to mature it would scatter its seeds in every direction. The Senator said he found that our Agricultural Department had reached the same conclusion arrived at by the Russians.

Can safely estimate my income from this plot of ground for each subsequent year indefinitely from \$800 to \$1,000, and that the cost of fertilizers, cultivation, care of trees, securing the crop, etc., not exceeding 15 per cent. of the above estimated amount yearly.

Last Spring I decided to crop but a small part of the ground, planting the same to potatoes among the smaller trees, cultivating the remainder for the benefit of the trees and fruit only. However, in July I sowed nearly two acres of the orchard to strap-leaved turnips, securing a good crop, besides having a beneficial effect in preventing early ripening and dropping of the fruit.

The western New York farmer, or any other farmer that is situated in what is called the fruit belt of the United States, and the possessor of five acres or less suitable for fruit growing, can't afford to keep a cow, unless she will feed and milk herself, and put up a two gallon jar of butter per day as an offset for having been a previous incumbent of the ground.

Second. When measuring the acid into the test bottle, hold the bottle at an angle that will cause the acid to follow the inside walls to the bottom of the bottle and not drop through the milk in the center of the bottle. If properly poured into the test bottle there will be a distinct layer of milk and acid, with no black color between them.

Third. Thoroughly mix the milk and acid as soon as measured into the test bottle. A better separation of fat is ob-

tained by mixing *gentle* rather than by allowing the two liquids to stand unmixed in the bottle until enough tests have been measured to fill the centrifuge.

Fourth. After a few minutes' whirling of the test bottle in the centrifuge, add hot water until the neck of the test bottle is filled up to the neck only; then fill the neck of the test bottle with hot water and run the centrifuge another minute. Adding the necessary hot water in two portions is often a great help in getting a clear separation of fat. When the test bottles are finally taken from the centrifuge, they are put into hot water 140° to 160° Fahr., and the per cent. of fat read at that temperature.

Fifth. Too low results will be obtained if the centrifuge does not have sufficient speed. The machines have to be watched, as constant use wears some of them so the speed designed by the manufacturer is not obtained.

Sixth. When testing skim milk or buttermilk which have a very small per cent. of fat (two-tenths of one per cent. or less), the reading of the per cent. of fat should be made immediately on taking the test bottom from the centrifuge. If this is not done and the test bottle cools before taking the reading, the contraction of the liquid in the bottle will often leave the fat spread on the inside surface of the measuring tube so that it is not seen but has the appearance of being only a dirty tube. If read when taken from the machine the small globules of fat can be seen and estimated.

## STERILIZATION OF MILK.

## The Department of Agriculture's Simple Plan.

At the request of the Secretary of Agriculture, the Chief of the Bureau of Animal Industry has furnished the following simple directions for the sterilization of milk: The sterilization of milk for children, now quite extensively practiced in order to destroy the injurious germs which it may contain, can be satisfactorily accomplished with very simple apparatus. The vessel containing the milk, which may be the bottle from which it is to be used or any other suitable vessel, is placed inside of a larger vessel of metal, which contains the water. If a bottle, it is plugged with absorbent cotton, if this is at hand, or in its absence other clean cotton will answer. A small fruit jar, loosely covered, may be used instead of a bottle. The requirements are simply that the interior vessel shall be raised about half an inch above the bottom of the outer, and that the water shall reach nearly or quite as high as the milk. The apparatus is then heated on a range or stove until the

water shows no trace of buttermilk.

AVING been born and brought up a farmer in western New York, I thought I had become quite well versed in farm management when I had attained the age of 40 years. But not until I became the possessor of a village lot of five acres, which I now occupy, have I learned the importance of proper management of land for profit.

Some 20 years ago I came into pos-

session of this village property, and as I intended to make the same a permanent home, I questioned the propriety of keeping a cow, as had the former occupant. I will say in explanation that one and three-quarter acres of the lot were devoted to highway purposes, garden, house, barn, apple orchard and adjacent grounds for yard purposes. The central and rear part of the lot, containing three and one-quarter acres, was clear of any obstruction.

This had formerly been the cow pasture. On mature reflection I decided to set this out in hops, as that commodity had recently touched 75 cents per pound and was likely to reach \$1 before another harvest.

Three years later found me with the hop fever entirely off. My first crop of hops was a light one, and sold at 25 cents per pound; the second and last one, hard and dull at any price. A year or two later I disposed of them at \$1 per bushel. Profit and loss in the hop deal resulted in a large experience for the amount of land under cultivation, and a lack of moral courage to even attempt to strike a balance.

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## THE ORCHARD.

## Cullings.

Apple receipts for November were only 66,180 barrels. Last year for the same month they were 147,635 barrels.

It has been estimated that this year's crop of Florida oranges will be between 4,000,000 and 4,500,000 boxes. Fall storms injured the oranges badly, and in consequence prices are ruling lower than last year.

Yes, let farmers of the great West and Southwest continue to furnish us with roller flour from Northern hoard, and choice sirloin cuts from hog and steer, while we tickle their nose and palate with luscious fruits, each of which is suitable offering to the gods.—M. N. COOK, South Byron, N. Y.

nursery stock question that there has not been a more favorable time to purchase fruit trees in a number of years than the present.

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## Grape Pruning.

February and March were for a long

time considered to be the only proper

month for grape pruning, and by some

grape growers this opinion is still held.

Fall pruning, or any time after the

leaves drop, is now becoming quite gen-

eral, however, and it certainly has its

advantages. There are also some objec-

tions to it. Some wood not thoroughly

ripe may remain, which will Winter

kill; whereas if the pruning is left till

Midwinter all wood that is unripe will

be killed, and the other easily recog-

nized. After a little cold weather im-

mature wood will be sure to show it,

and with proper observation there is no

danger of mistaking it.

## A Home in Alabama.